

hereinabove differing only in the characteristic of the inner surfaces of the vaporization chamber walls.

Depicted in FIG. 10d, is a method for fabricating a vaporization chamber having walls with perforations in the surface thereof as provided in the aforesaid pending application. At least one thermal element is disposed in the vaporization chamber as described in connection with FIGS. 10a-10c above.

Depicted in FIG. 10e is a method of fabricating a vaporization chamber having an interior wall surface with irregularities including penetrations through the interior surface in the nature of cracks/crevices. The separate sections of the vaporization chamber are chemically or physically treated or cast from a mold/pattern having these configurations as part of the mold/pattern and processed by conventional methods to provide an interior surface with cracks/crevices. Thermal elements are disposed in the vaporization chamber as stated above.

There have therefore been provided an improved vapor generator and control system. Though a preferred embodiment has been described and depicted herein, the scope of the invention is defined by the claims to be filed pursuant to law and interpreted in light of the specification and drawings.

#### WHAT IS CLAIMED IS

Claim 1: A superheated vapor generator system for generating superheated vapor comprising:

    a vapor generation space for entry thereinto of liquid to be vaporized into

superheated vapor, said vapor generation space including at least one thermal element.

Claim 2: The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by at least one surface and wherein said thermal element is attached to said at least one surface.

Claim 3: The invention as set forth in Claim 1 wherein said at least one thermal element is loosely disposed in said vapor generation space.

Claim 4: The invention as set forth in Claim 1 wherein said vapor generation space is defined at least partially by at least one surface and wherein said at least one thermal element is displaced from said at least one surface.

Claim 5: The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by at least one surface and wherein said at least one thermal element is in contact with said at least one surface.

Claim 6: The invention as set forth in Claim 5 wherein said at least one thermal element and said at least one surface are composed of materials such that electrolysis is substantially avoided.

Claim 7. The invention as set forth in Claim 5 wherein said at least one thermal element and said at least one surface are composed of substantially similar materials.

Claim 8. The invention as set forth in Claim 5 wherein said at least one surface is substantially composed of stainless steel and said at least one thermal element is substantially composed of aluminum.

Claim 9. The invention as set forth in Claim 5 wherein said at least one thermal element is substantially composed of stainless steel and said at least one surface is substantially composed of aluminum.

Claim 10. The invention as set forth in Claim 1 further including means for

providing input of liquid into said vapor generation space.

Claim 11. The invention as set forth in Claim 10 wherein said means for providing input of liquid into said vapor generation volume is controllable by a user thereof.

Claim 12. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by at least one surface and wherein said at least one surface is substantially smooth.

Claim 13. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by at least one surface and wherein said at least one surface defines at least one etch.

Claim 14. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by at least one surface and wherein said at least one surface defines a plurality of etches.

Claim 15. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by at least one surface and wherein said at least one surface defines at least one perforation.

Claim 16. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by at least one surface and wherein said at least one surface defines a plurality of perforations said perforations varying in size substantially randomly.

Claim 17. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by at least one surface and wherein said at least one surface defines at least one groove.

Claim 18. The invention as set forth in Claim 17 wherein said at least one groove

has a depth substantially in the range of 0.0030-0.0050 inch.

Claim 19. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by at least one surface and wherein said at least one surface defines a plurality of ridges and grooves.

Claim 20. The invention as set forth in Claim 19 wherein said grooves are substantially circular in shape.

Claim 21. The invention as set forth in Claim 20 wherein said ridges and grooves are in the form of substantially concentric circles about an axis of said vapor generation space.

Claim 22. The invention as set forth in Claim 19 wherein the depth of said plurality of grooves varies substantially randomly in the range 0.0030 inch -0.0050 inch.

Claim 23. The invention as set forth in Claim 19 wherein the depth of said plurality of grooves varies substantially randomly in the range 0.030 inch - 0.050 inch.

Claim 24. The Invention as set forth in Claim 19 wherein said at least one surface defines at least one cross-groove.

Claim 25. The invention as set forth in Claim 1 wherein said at least one thermal element is generally cylindrical in configuration.

Claim 26. The invention as set forth in Claim 1 wherein said at least one thermal element is thermally conductive.

Claim 27. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by a surface and wherein said surface includes at least one opening in the nature of a crevice or a crack.

Claim 28. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by a surface and wherein said surface defines a

plurality of irregular openings therethrough.

Claim 29. The invention as set forth in Claim 1 wherein said vapor generation space is in a vapor generator and further including at least one vapor generator other than said first vapor generator, said first vapor generator having means for output of superheated vapor and being connectable to controller means for controllably supplying said first vapor generator liquid for vaporization, said at least one vapor generator other than said first vapor generator having means for output of superheated vapor and being connectable to said controller means for controllably supplying to said at least one vapor generator other than said first vapor generator liquid for vaporization; and further including controller means connectable to said first vapor generator and to said at least one vapor generator other than said first-mentioned vapor generator and being adjustable to control supply of liquid to said vapor generators such that at least one of said superheated vapor generators produces output of vapor during selected time intervals, said first vapor generator and said at least one vapor generator other than said first vapor generator producing output of superheated vapor in response to input of liquid.

Claim 30. The invention as set forth in Claim 29 wherein said controller means is adjustable to control the supply of liquid to said superheated vapor generators such that said first vapor generator and said at least one vapor generator other than said first vapor generator produce output of superheated vapor substantially continuously.

Claim 31. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by a surface, and wherein said surface contains at least a portion defining a plurality of holes.

Claim 32. The invention as set forth in Claim 31 wherein the depths of said holes

vary substantially randomly.

Claim 33. The invention as set forth in Claim 1 wherein said at least one thermal element comprises a plurality of thermal elements and wherein said thermal elements are of arbitrary shape.

Claim 34. The invention as set forth in Claim 1 wherein said at least one thermal element is at least partially composed of thermally conductive material.

Claim 35. The invention as set forth in Claim 1 wherein said vapor generation space is at least partially defined by a surface and wherein said surface defines a plurality of openings in the nature of cracks and crevices.

Claim 36. A superheated vapor generating system comprising at least one vapor generator, said vapor generator being thermally conductive and defining at least one vapor generation space, said vapor generation space containing at least one thermal element therein.

Claim 37. The invention as set forth in Claim 36 wherein said vapor generator is substantially spherical in shape.

Claim 38. The invention as forth in Claim 36 wherein said at least one thermal element is of arbitrary shape.

Claim 39. The invention as forth in Claim 36 wherein said at least one thermal element is thermally conductive.

Claim 40. The invention as forth in Claim 36 wherein at least one thermal element and said vapor generator interior wall defining said vapor generation space are of substantially similar material to avoid electrolysis.

Claim 41. A method for fabricating a superheated vapor generation system which includes the steps of:

- (1) providing at least two sections fastenable together to define and enclose interior space;
- (2) providing at least one thermal element for inclusion in said interior space;
- (3) fastening said at least two sections together; and
- (4) disposing said at least one thermal element in the interior space defined thereby.

Claim 42. A method for fabricating a superheated vapor generator which includes the steps of:

- (1) providing at least two sections fastenable together to define interior space;
- (2) providing at least one thermal element for inclusion in said interior space;
- and
- (3) fastening said at least one thermal element in said interior space .

Claim 43. A method for fabricating a superheated vapor generator which includes the steps of:

- (1) providing at least two sections fastenable together to define interior space;
- (2) providing at least one thermal element for inclusion in said interior space;
- (3) fastening said at least two sections together such that there is access to the interior space; and
- (4) inserting said at least one thermal element into said access to said interior space.

Claim 44. A method for fabricating a superheated vapor generator which includes the steps of:

- (1) providing at least two sections fastenable together to define and enclose interior space;
- (2) providing at least one thermal element and attaching said thermal element

to at least one of said sections; and

(3) fastening said at least two sections together.